

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Commissioner
US Department of Commerce
United States Patent and Trademark
Office, PCT
2011 South Clark Place Room
CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE
in its capacity as elected Office

Date of mailing (day/month/year) 23 February 2001 (23.02.01)	
International application No. PCT/US00/00992	Applicant's or agent's file reference GJH0006
International filing date (day/month/year) 14 January 2000 (14.01.00)	Priority date (day/month/year) 15 January 1999 (15.01.99)
Applicant RILEY, Kenneth, Lloyd et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
14 August 2000 (14.08.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Antonia Muller Telephone No.: (41-22) 338.83.38
--	---

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US00/00992

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : C10G 47/02, 47/24, 47/04, 11/00, 11/02, 11/04

US CL : 208/108, 112, 113, 121, 123, 124

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 208/108, 112, 113, 121, 123, 124

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONEElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)
NONE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,808,563 A (VELENYI) 28 February 1989, col. 3, line 16 to col. 4, line 63.	2-6, 9-12
Y	US 4,014,925 A (FERLAZZO et al) 29 March 1977, col. 1, line 60 to col. 4, line 14.	2-6, 9-12
Y	US 5,112,472 A (GOSSELINK et al) 12 May 1992, col. 1, line 45 to col. 6, line 9.	1-12

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
E earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*A* document member of the same patent family
O document referring to an oral disclosure, use, exhibition or other means	
P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

26 MARCH 2000

Date of mailing of the international search report

18 APR 2000

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

MARK BELL

Telephone No. (703) 308-0661

DEBORAH THOMAS
PARALEGAL SPECIALIST

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 22 MAR 2001

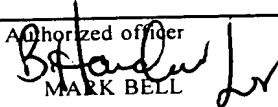
Applicant's or agent's file reference GJH0006	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US00/00992	International filing date (day/month/year) 14 JANUARY 2000	Priority date (day/month/year) 15 JANUARY 1999
International Patent Classification (IPC) or national classification and IPC Please See Supplemental Sheet.		
Applicant EXXONMOBIL RESEARCH AND ENGINEERING CO.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 14 AUGUST 2000	Date of completion of this report 08 FEBRUARY 2001
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer  MARK BELL Telephone No. (703) 308-0661

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/00992

I. Basis of the report

1. With regard to the elements of the international application:*

☒ the international application as originally filed☒ the description:

pages 1-38, as originally filed

pages NONE, filed with the demand

pages NONE, filed with the letter of

☒ the claims:

pages 39-40, as originally filed

pages NONE, as amended (together with any statement) under Article 19

pages NONE, filed with the demand

pages NONE, filed with the letter of

☒ the drawings:

pages 1-2, as originally filed

pages NONE, filed with the demand

pages NONE, filed with the letter of

☒ the sequence listing part of the description:

pages NONE, as originally filed

pages NONE, filed with the demand

pages NONE, filed with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. ☒ The amendments have resulted in the cancellation of:☒ the description, pages NONE☒ the claims, Nos. NONE☒ the drawings, sheets/fig NONE5. ☐ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

**Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/00992

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. statement

Novelty (N)

Claims 1-12 YES
Claims NONE NO

Inventive Step (IS)

Claims 1-12 YES
Claims NONE NO

Industrial Applicability (IA)

Claims 1-12 YES
Claims NONE NO

2. citations and explanations (Rule 70.7)

Claims 1-12 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest the claimed process for producing a hydrocrackate, wherein a feedstream is passed through two or more catalyst beds, and the catalyst comprises a bulk multimetallic catalyst comprised of at least one Group VIII non-noble metal (selected from Ni and Co) and at least two Group VIB noble metals (selected from Mo and W).

Velenyi teaches a molybdenum-tungsten catalyst complex. Although the complex of Velenyi can contain Mo, W, Ni, and Co, the catalyst contains additional metals and is employed in a process for converting methane and oxygen to higher order hydrocarbons.

Ferlazzo et al. teach a catalyst that may contain Mo, W, Co, and Ni, but not in the proportions of the bulk multimetallic catalyst. Also, the catalyst of Ferlazzo et al. is employed in a process for the production of methyl acrylate or a mixture of methyl acrylate and acrylic acid from a gaseous mixture comprising acrolein.

The claimed process has Industrial Applicability in the art of hydrocarbon processing.

For the above reasons, claims 1-12 meet the criteria set out in PCT Article 33(2)-(4).

----- NEW CITATIONS -----
NONE

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/00992

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Sheet 10

Continuation of: Boxes I - VIII

CLASSIFICATION:

The International Patent Classification (IPC) and/or the National classification are as listed below:
IPC(7): C10G 47/02, 47/24, 47/04, 11/00, 11/02, 11/04 and US Cl.: 208/108, 112, 113, 121, 123, 124

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav	TM	Turkmenistan
BF	Burkina Faso	GR	Greece		Republic of Macedonia	TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's	NZ	New Zealand		
CM	Cameroon		Republic of Korea	PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LJ	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		



P.B.5818 - Patentlaan 2
2280 HV Rijswijk (ZH)
☎ +31 70 340 2040
TX 31651 epo nl
FAX +31 70 340 3016

Europäisches
Patentamt

Zweigstelle
in Den Haag
Recherchen-
abteilung

European
Patent Office

Branch at
The Hague
Search
division

Office européen
des brevets

Département à
La Haye
Division de la
recherche

Dew, Melvyn John
ExxonMobil Chemical Europe Inc.
Law Technology
P.O.Box 105
1830 Machelen
BELGIQUE

RECEIVED IN MACHELEN

10 FEB 2003

IP LAW

RECEIVED
MAR 13 2003
TC 1700

Datum/Date

11.02.03

Zeichen/Ref./Réf. P1997J057L	Anmeldung Nr./Application No./Demande n°/Patent Nr./Patent No./Brevet n°. 00908284.3-2103-US0000992
Anmelder/Applicant/Demandeur/Patentinhaber/Propriétaire/Titulaire ExxonMobil Research and Engineering Company	

COMMUNICATION

The European Patent Office herewith transmits as an enclosure the European search report for the above-mentioned European patent application.

If applicable, copies of the documents cited in the European search report are attached.

☐ Additional set(s) of copies of the documents cited in the European search report is (are) enclosed as well.

PC MASTER . UPDATED

10 FEB 2003

N. CALLENS

REFUND OF THE SEARCH FEE

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.





European Patent
Office

**SUPPLEMENTARY
EUROPEAN SEARCH REPORT**

Application Number
EP 00 90 8284

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Y	DATABASE WPI Section Ch, Week 199940 Derwent Publications Ltd., London, GB; Class H04, AN 1999-469695 XP002205583 & CN 1 218 088 A (CHINA PETROCHEMICAL GEN CO), 2 June 1999 (1999-06-02) * abstract *	1-12	C10G47/02 C10G47/24 C10G47/04 C10G11/00 C10G11/02 C10G11/04
Y	EP 0 244 106 A (UNION OIL CO) 4 November 1987 (1987-11-04) * claim 1 *	1-12	
Y	EP 0 183 353 A (EXXON RESEARCH ENGINEERING CO) 4 June 1986 (1986-06-04) * claim 1 *	1-12	
Y	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 05, 30 May 1997 (1997-05-30) & JP 09 000929 A (SEKIYU SANGYO KASSEIKA CENTER; COSMO OIL CO LTD), 7 January 1997 (1997-01-07) * abstract *	1-12	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			C10G B01J
The supplementary search report has been based on the last set of claims valid and available at the start of the search.			
Place of search MUNICH		Date of completion of the search 31 January 2003	Examiner Janus, S
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 90 8284

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

31-01-2003

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
CN 1218088	A	02-06-1999	NONE		
EP 0244106	A	04-11-1987	US	4686030 A	11-08-1987
			AT	58070 T	15-11-1990
			CA	1270785 A1	26-06-1990
			DE	3765990 D1	13-12-1990
			EP	0244106 A1	04-11-1987
			JP	62199687 A	03-09-1987
			JP	62260888 A	13-11-1987
EP 0183353	A	04-06-1986	US	4591429 A	27-05-1986
			CA	1251772 A1	28-03-1989
			DE	3569340 D1	18-05-1989
			EP	0183353 A1	04-06-1986
			JP	61086949 A	02-05-1986
JP 09000929	A	07-01-1997	NONE		